WHAT IS CLAIMED IS:

1. A cutting device for bone tissue for cutting a segment of bone tissue along a predetermined cut surface, wherein said cutting device produces a high-pressure fluid jet, which can be guided along a freely selectable cut surface of the bone tissue and to which pharmacologically compatible abrasive agents can be added to enhance the cutting performance.

2. A cutting device according to claim 1, wherein the cutting device is configured for cutting bone tissue along a cut surface having a freely selectable shape.

3. A cutting device according to claim 1, wherein the cutting device is provided with a control unit for determining the desired cut surface.

4. A cutting device according to claim 3, wherein the control unit has a control program for cutting a cut surface in the shape of a circular arc.

5. A cutting device according to claim 1, wherein said cutting device includes means for reducing the energy of the high pressure fluid jet on a side of the bone tissue to be cut that faces away from the high-pressure fluid jet.

6. A cutting device according to claim 5, wherein said energy reducing means comprises a deflector equipped with a suction line for evacuating the cutting fluid.

7. A cutting device according to claim 5, wherein said energy reducing means is provided with a supply line for supplying a rinsing liquid to a cut area.